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> O <
O| |O  Intelligenetics
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GENALIGN - Multiple Sequence Alignment Program
Release 5.4
Wed 21 Nov 101 12:11:43-PST

Solution Parameters:

  Nucleic Alphabet    = Identity
  Output line length  = 80
  Compress            = Off
  Histogram           = Off
  Randomization       = Off

  AMINO-Res-length    = 2
  DELetion-weight     = 5.00
  LEngth-factor       = 0
  Matching-weight     = 1.00
  NUCLEIC-Res-length  = 4
  Spread-factor       = 50

Clustered order of selected sequences:

  5.  US-09-417-251-9     (1-2031)
  4.  US-09-417-251-7     (1-1774)
  8.  US-09-417-251-15    (1-1943)

Region Alignment: (listed in Clustered order)
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US-09-417-     1                                        ctcacCagtcGtGCccgCggccatcCaattcctctcgctggaCggcGTgc
US-09-417-     1                gCacgAggagccggATGCG    GCggcCGGTGCT
                                |||||              ||||||
US-09-417-     1    gttcttcttcActtcAcaaATGGaatccTctcgttGTGCTctctctcgccacctccTCcTCt
consensus         gttc-c---a---c--c-atgCg--tgC-cgcggtgCt--tc----c--atc---CtccTc-

US-09-417-    46   agcacaCatcAggTgAgacgcgTgaGAGGGa    atgggatcaaacacacaatgtccccgTccat
-09-417-      43   TCacCTCCCgcgActTtgatggtTttGAGGGA
                   ||||                      ||||||
US-09-417-    62   TCtccCTCCC                                    tctttctcaccctctcgcgacgacctcaCCG
consensus         tc-cCtcC--a--t--------t--gagggatc-t------c-----------cc-t-Ccg

US-09-417-   105   cttttccgGtcgtcctcctctcgCgCcaccatagccGcaGccGcCGgaagcaA
US-09-417-    81   AgGACgGAGGA    tttGggGACtTCTCCG    atttGAGGgACTCGAtgcctgA
                   ||||||||        ||||          ||||
US-09-417-   101   AcGACGAGGACAcctcggcttccTcGacGAgccCTCCGccgcgccggcGACACggccActaccA
consensus         a-gacGgaGGac-tc--c-t-cTcg-cgacctCtCCgcc----c-Gaggacgccga---c--A
```

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US-09-417-   208                                                      agggagactacgacgacgacgaccttctcttccaagatcaggacgaaccTacaAggcca
consensus         ctccagtatcttattgacaactccgacgacgacatccccaccaacgatcccgacgcggtggcctg
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US-09-417-   208   agggagactacgacgacgacgaccttctcttccaagatcaggacgaaccTacaAggcca
consensus         agggagactacgacgacgacgacgacacctttcttccaagatcaggacgaaccTacaAggcca

US-09-417-   252   agggagactacgacgacgacgacgacacctttcttccaagatcaggacgaaccTacaAggcca
US-09-417-   140                                                              TACAAGCC
                                                                               |||||
                                                                               TACAAG

US-09-417-   313   ccagccCGGAGaTcGACGAGGAGGAGGAGAGGAccaCGTaGTgGTCctcggcgcccgcaAAAcCTTLtCCtccTtC
US-09-417-   148        GCCcGGAGGTtGgGACGAGGAGGAtgTCGGTCGTgGTTGaAGgAGgAGgtAACTTCagCGAgLTTC
                        ||||||||||||||||||||||||||||||||||||||||||||||||
US-09-417-   214   cagCCCGGAGGTGGACGAGGAGGAGGACGTCGTCATTTGAaGGAGGAGAACTTCACCGAGacACC
consensus         ccaGCCCGGAGGTgGACGAGGAGGAcGTCGTcgT-tTgaagGagg--AACTTcacCgacttc

US-09-417-   374   cTcGCcctccAacCcacccaTCTTATtGCTtGaGAGTTCTacGgcaCCttGGTgTTGGCcACtCGCAGG
US-09-417-   206      GTtGGaGAAgAAACCGgTTTgGTTATGGTgCAGGTTCTACCgtCccTtGGTtGCtCACtGGCCAGG
                     ||||||||||||||||||||||||||||||||||||||
US-09-417-   274   GTcaAGAgcAAACCgcCTTCGTCaTGGTCagAGcTTcGCCCTTCGTCGTtGcCCACtGCCAGG
consensus         gTcgaga-cAAccgcttcGTTATtGT-GAGTtctACGc-CCCTCGTtGtGGCcACtGCCAGG

US-09-417-   435                                               agctccgccccccggattaaCcGGCGGCGGcGGcGGCGGCGGCGGCGAtctccCGGcttcAACcaACcaaCCAAg
consensus         agctccgccccccggattaaCcGGCGGCGGcGGcGGCGGCGGCGGCGAtctccCGGcttcAACcaACcaaCCAAg

US-09-417-   252   agctccgccccccggattacgCtgGGCGGCCCGGGCcGGcGGGAGCGGcCGGCGGCGC-AC-gAAct-aaagG
US-09-417-   267                                              CGCTGGCGCCG    GAGTATGCtCGCtGCtGCtGATtGcAAAGG
                                                             |||||||           |||||
US-09-417-   335                                           CCCTCCGCGCCG    GAGTGCGCCGCcGCTGGCGCCG

consensus         agctccgccccccggattacgCtgGGCGGCCCGGGcGGCGGGAGCGtAtgcccCGCcGCGCC-AC-gAAct-aaagG

US-09-417-   496   gcccAACttcGCcccTTCGCcACcaTCcctcTTCTTcaTgCGAtGGcGGTCCCCAGagggcTAtaacG
US-09-417-   310   CGAgaAACCgTgGTTTGcGGAAGGTcGAtCGACgaGcGAGGAGAATGAAAtTGtCGGAGAAGTAc
                   ||||||||||||||||||||||||||||||||||||||||||||||
US-09-417-   378   CGAagACCgTaaTTTTGGcAAAGGTgGAtGCCcaCcGGAGcACcGAGCGAGAATGAAaTTGtCGGCaGAAGTAC
consensus         cga--aACgT-gtttTgGC-AAGGT-GAtCCcACcGAGGAGgAAatTGgCyCAGAAGTAC

US-09-417-   557   GACGTCCAgGcCTtCCcACcaTccTcTTcTTCTTcaTgCGAtGGcGGTCCCCAGaggcGTAtaacG
US-09-417-   371   GACCTTCAAgGatTTtCCgAcTGtTtCTtTAttTTcTTcGcCGcGAGGAGgtCCAcAAGTcTTACccTG
                   || |||||||  ||||||||||||||||| || || | |||| ||
US-09-417-   439   GAtCTTCAgGGTtTCCcAcaCTgTCccACTTCTTcGCtTtGGATGGcaTTcACcAAGCTTAtaaTG
consensus         GAcGTTCAgG-TTCCcACtgTCcacTTCTTCgTcGAtGGcggTCCacCAAg-cTTAtaaTg

US-09-417-   618   GAgccaGGACcAAGGaAGCcccAtCGGGAgcaGAGGAGGAtCaaCAAGAaAgCTtCGGCCCcagccGcCGgTgcA
US-09-417-   432   GACAcgCGGACcAAGGagCCCAAGGATGGcCTAAtGACcTcGGAtCcaCAAgGAcctCTTACcCTG
                   ||| ||||||||||||||||||||||||||||||||||
US-09-417-   500   GCcAaaAGGACcAAAGAGATCCTATAGaTGTAGAgGAAGAGGAAGAATCGGAcaCTTgGGCATaTA
consensus         Gaca-aGGACcAAgGAGATCCtaTAaGT-acctGGATcaa-AAGAAGaAATCGGaccCTGgcaT-ta

US-09-417-   679   aAAtgTCACCggCTGGAGcGAGGGgCcAgaGcCATaACTcACCgagaGAtgacAAAGccGTCCTT
US-09-417-   493   CAAcAaACTtCgGTGGAAGAtCCTGgGcgGAtCCtGGAGatGACttctGTattTA
                   ||| |||  ||||||||||||||||||||||
US-09-417-   500   CAAcTtGACTcaGTGaGGAtCTCcAACGCCATcTtGACcaacgCAAgACTAAaGTtGTtCTT
consensus         CAACTtgACTacaGTGaGGAtCCTCcAACGCCATcTtGAcgatacaAgACTAAaGTtGTtCTTg

US-09-417-   561   CAACTtgACTacaGTGaGGAtCCTCcAACGCCATcTtGAcgatacaAgACTAAaGTtGTtCTTg
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US-09-417-   166   catGGATGA                    Ggaggtggtggacgac
US-09-417-   130   tcgGGATGA                    G
                   |||||||||                    |
                   G

US-09-417-   162   cgacGGATGAcgccaattcggcgacttcggggagggaggaccgaggggaggCG
consensus         c--gGATGAcgccaattcggcgacttcggggagggaggaccgaggtggtggacgac

US-09-417-   191   ctccagtatcttattgacaactccgacgacatcccaccaacgatcccgacgcggtggcctg
US-09-417-   140   tcgGGATGA
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consensus          cAAc-T-ACtac-GTtgGA-GAtGtcAaacGCATacTgAcc---GA-actAAAgGttGTtctt

US-09-417-   740   GccTtCCTCgAcAcacTatccGGttgCTcAcAgtgAAtgAGAcGTtGcTGcTtCCTtCGAAgGCTGG
                   ||| | ||||||||||||||||| |||||||||||||||||||||||||||||||||||||||
US-09-417-   554   GgttAcCCTgAAcTCcCTTgGTtgGGGcCCTGAGAGcaAtGAGAGtTtGcTGcTtCcAAGACTGG
                   ||| |||||| |||||||||||| ||||||||||||||||||||||||||||||||||||||
US-09-417-   622   GGCttCCTcAAcTCttTAgTtgGGtcCCTGAGAGtGAGGAGGCTtGCTGCTtCAAGACTCG

consensus          GgcttCCTcaActc-tTagt-GGtccCTgAgAgtgAGtGAGGCTtGCTgCTtcaAGacTgg

US-09-417-   801   AAGATAgacATACTtTTATCAgAcACTtGCTcAAGcTTtTtCCATATcGA
                   |||||||| ||||||||||||||||||||||||||||||||||||||||
US-09-417-   615   AAGATGAtGTcAACtTTTAcCAAAACgGTtGGAtCCTGAAgGCCAAGCTtTTtCCAcATTGA
                   |||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-417-   683   AgGATGAtGTcAAtTTTTTAtCAAAcTgTtGGATCCTGAtGTGGCAAAGCTtTTtCCATATTGA

consensus          AAGATgatgTCAAcTtTTTAtCAaActgtGgaTCCTGAtGTgGC-AAGCTtTTCCATATGA

US-09-417-   862   tGCagCACCgAAcGCCtCCatCCCgTTaGTtgCTcTGCtgAAGAAAgAAgGAgAAgtTGAccttc
                   |||||||||||||||||| ||||||| ||||||||||||||||||||||||||||||||||
US-09-417-   676   aGCttCAGCcAaAAcGCCCtCgccCCTgGGTAtTGtCTtAAGAAAcGGTtttTTTcCAcATTGA
                   |||||| |||||||||||||||||||||||||||||||||||||||||||| |||||||
US-09-417-   744   ccCagatcGttAAgCGCCCCagtCTtTGaTcccTcgTcAAAGAAGAAAGAgGAGAAAAACTtAACCac

consensus          -gCagcacG-AAgCGcCagCctTtgT-cTgcT-AAGAAaAgGAgaGAaAaAacTgAcc-c

US-09-417-   923   TaTGATGGgGAGTTTaaagcaTCAGCcAttGCtgTgtTTgTgTcTgcTgctAACAttGCCTtCCTT
                   ||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-417-   737   TTTGATGGGCGGAGTTtctAAGTCtCGAaTTTgCtgAAtTGTtCgAAAGTtCCAAtAAGCTtCCaT
                   |||||||||||||||||||||||||||||||||||||||||||||||| |||||||
US-09-417-   805   TTTGAtGGGCAAaTTTgAgAAGTCGGAaAATAgCCAgtACTtTGCtCTtCGAAAATCcAATCAAGAAACA

consensus          TtTGATGGcgAgTtTt-a-aagTC-GcaAttGctga-TttGTtTttgtGccAACAAGCTtCCtt

US-09-417-   984   TgGTgACCacactTaACtcaAGAAAActCCCCtCtctAttTtTtcggcAAtCcAAtcAAGAAgCA
                   |||||||||||||||||||||||||||||||||||||||||||||| |||||||
US-09-417-   798   TaGttAcCAAAgTTTACgGAGAGAAAGcGCAcCCAtTgATtTTCGAAAGTtCAAtAtAAGAAACA
                   |||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-417-   866   TgGTaAcCAAATtTTTtcAcAAGAGAAAGtCGGAaAATAgCCAAtcCAATcAAtcAAGAAACA

consensus          TtTGATGGcgAgTtTt--tTtAc-agAGAAAgtgCgcCCaTc-atTtcGaaAatATCCAAtcAAGAAgAAaacA

US-09-417-  1045   GaTttTAcTAtTTGCTgTTgcAAgcGAgTtCcaccAAAtTtctgtCCCAtctTTTaAgGAagca
                   |||| ||||||||||||||||||||||||||||||||||||||||| ||||||||
US-09-417-   859   GTTgaTtCTAtTTTgCCgATTtcAAAtgATTCAGAGAAaTAAtCCCaTtATTtgAAgtCg
                   ||||| |||||||||||||||||||||||||||||||||||||||||
US-09-417-   927   GTtGtTGgTCTgTtTtGCaAcTtCAAAtcTtCGTtCTtCTgTcAttaAgGAagct

consensus          GttgtT-ACaA--tTtCAaAatGAtTCagagAaatt-aTCCccataTtTaAaGAagct

US-09-417-  1106   gCaAaAcCatTTaAgGGAAaAGtTAtaTATtCGtcTtGTTGGAAcgaCAgTGAgGAAgTTG
                   ||||| ||||||||||||||||||||||||||||||||| |||||
US-09-417-   920   tCgAAgTCTTtTAAgGGAAAGcTtATttcGTtTtATGtGAAAtTgAcAATGAAAGtGTTG
                   |||| |||||||||||||||||||||| |||||||
US-09-417-   988   gCaAaAaTCTTtcAcAAgGGAAaGtTgArCtTtCtAtAnTGGAAAAtGgAtAAcGAaGAtGTTG

consensus          gCaaAatCttTAaGgGAAaAGtT-aT-TTtGT-TaTGtGGAAat-GAcAatGAaGAtGTTG

US-09-417-  1167   GtgAacCagTgtGccgAcTACtTTtGGtcATtACTGGaacAAgACcacaGttGcTtACAC
                   ||||||| ||||||||||| ||||||||||||||||| |||||||||
US-09-417-   981   GAAAgGCCgGTtAtCAGAAtAacTACtTTTGGGcATTGAtCAAGATGGTtCCAgAgGTTCTTGgaTACAC
                   |||||| ||||||||||||||||||||||| ||||| ||||
US-09-417-  1049   GAAAGCCtGTTtCAGAAtAcTACTtTtGGtcAtCACAGtGGgAAtGCCCcAaAgGAcTtGGgTACAC

consensus          GtgAaccaGTtgtCcgActACtTTtGGtcATtacTGGgAatGcccaAaGtGcTtACAC
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consensus   GaaAgGCC-GTtcCAgAatACtTTgGGtAtTAgtGG-aAtG-tccAaaAagGTtCTtGg-TACAC

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US-09-417-  1228   TGGtAATGAAGAtgtcTAGgAAAAtTTTctTCTTGGatTgGtGAGtGGtgtCacTtGAAgcTATaAAG
                   |||| ||||||||||||||| || ||||||||| ||||||||||||| |||||
US-09-417-  1042   TGGaaATGAGtGAAcaGcGAAgAAAAtTTTGTtGCTtgGCTaAgGAAGtTACtTgGAtTAATTAAG
                   |||| ||||||| |||||||||||||| |||||||||||| ||||||||
US-09-417-  1110   TGGgAAtGAtGAtgGAaAaAAAAtTTGTtGCTtGAaGtGAcTgGGctGAcAAAAtTTAAG

consensus          TGG-AATGA-AAgAAtTTgTtgCTtGaGtgg-GAgGttgact-ttGA-aatAttAAG

US-09-417-  1289   GacTtCGgCtGAAggTTTtCTTGGAtgAacGAcAAGcTtAcACCaTTcTAcAAAtGGAaCCagTgc
                   ||||| ||||||||||||||||||||||||||||||||||||||||| ||||
US-09-417-  1103   GCttTCCGgGGAgAAAAtTTtCTtGGAcAcAAGcTtAAAACCcTTTtATAAAgTCAGAtCCCaaTTC
                   ||||| |||||||||||||| ||||||||||||||| ||||||||||
US-09-417-  1171   GCaTtGGGcGacGAtTTCCCTGAAgcGAcCAAGCtAAAAcCcTTTtACAAgGTCAGAtCCCCagTTC

consensus          Gc--TTcCg-GAagaTTCtTtgGAagAacAAGcTaAaAcC-TTTtACAAgGTcAGAtCCcagTtc

US-09-417-  1350   CTGAatCTAAtGAtGATGGGGAtGtGAAAaTtGTtGTTGGGgaAgAAtcTGGAtCctaAtAtaGTTTT
                   ||||||||||||||||||||||||||||||||||||||||| |||||||||||
US-09-417-  1164   CTGAAgACTAatTgtAATTTGgGAcAaAgAAGtTAGTGGTtGGGgAacAactTcGGAacAtATtGTtTtT
                   ||||| |||||||||||||||||||||| ||||||| |||||
US-09-417-  1232   CTGAAgTAATGAatGATGATGGGAAAaTtAGtAcGTtGGGgATtAAtTTtGAtgAAAtTGTtcTT

consensus          CTGAaacTAAtGAtGAtGGtGAtGGtGAAAaTaGT-GTtGGgaA-AAtTt-GAt-aaAttGTtTT

US-09-417-  1411   tGATGAAacAAAcGAtGtTaCTtCttGAGAtATaAtGcaccaTGGTtGtTGAcTccCTGTCAAtCg
                   ||||||||||||||| ||||||||||||||||| |||||||||||||||||| ||||||
US-09-417-  1225   aGAtGAAtCgAAAGtGTGGcACTTGCtCCTCttGGCAtCGAtCACTtGtcAtTG
                   ||||| |||||||||||||||||||| ||| ||||||||
US-09-417-  1293   ggATGAgtTCAAAGaAAgGtTGGAAtATCtAAGgTcCGGtaataAttgAGgtCtctGTtgTaAtaG

consensus          -GATGAacaAagGAtGtTcCTtcCcGAGAT-TATgCctcc-TGGtGTGG-CAtTgCCAAgca

US-09-417-  1472   CTGGAACCtACTtACAtcAACAAtGAgcAtcCacgtCGcAAGtGtCtGAcGGAtAcCCgAcGAT
                   ||||||||| |||||||||||||||| |||||||||| ||||||||||| ||||
US-09-417-  1286   CTGGAAaccAACTtATAtCAcAAGcAAtAtTCACgGtCGGCAtcAAtcACtTGtcAtTG
                   |||||| ||||||||||||||||||||||||||| ||||||||||||||||
US-09-417-  1354   CTGGAgGCCAAtatAcgAcAAGcAtCCtCGtaataAttAGgAgTCtcTTGTaAnAaG

consensus          CTGGAacctACctAcAcAAGCTtGCCAaAcAtcTacACgGagtataTtGA-TC-CTtGT-aTaG

US-09-417-  1533   CCAAAaAtGGAtGGtAcTACCAAtGAgcAtCacGtGcGcAAAGtCTGAcGGAtaCCCgAcGAT
                   ||| |||||||||||| |||||| ||||||||||||||||||||||||||||||
US-09-417-  1347   CTGAAGAtGGCGCAcAcAAtGAGAAcAAtCCCcGGtGGcgAAGTCCgAGtCCcAcAeAAt
                   |||||||| |||||||||||||||||||||| ||||||||||||||||||
US-09-417-  1415   CCAAGAtGGAtGGaAcACAAAtGAgcAtCCtCAGGcGCTcAAGcTCcAGtGATtcCCcACtCT

consensus          CCAAGAtGGAtGG-ACaAcAAtGAgcAtCCcGGgGC-AAGtcTgAtGGAtTtcCC-AC-aT

US-09-417-  1594   TCTCTTcTAtCCAgCTCgGGAAgAgAAGCTTGAgGCCAATCACtGcAAtcCAcTtTGAgGgggGGAgcGGACA
                   ||| | |||||||||||| |||||||||||||||||||||||| |||||| |||||||
US-09-417-  1408   TCTgTTtTTTCCCAgCTgGGAAAgAtTtGACCCTTAtCACttGtCGAtcACgGAtGTGTAC
                   ||| | |||||||||||||||| |||||||||||||||||| ||||||||||
US-09-417-  1476   cCTcTtcTtCCCgGCcAGGAAAcACAAAGAgtTTGAcCCtATtACTGTtGAtACAGAtGTGTACa

consensus          cCtcTTcTtccCagCtcGgaAAcAcAaGAgtTTgAcCCtATtcACtGTtGAtac-GAtCGtaca

US-09-417-  1655   GtgGTacATCtTcTACAAgTTcATCAAGAcAcatGCtcagcATcCCcTTcAcCtTgaAGcgcc
                   ||| | |||| |||||||||||| |||||||| ||| |||||||||||
US-09-417-  1469   GttGtgGcCacCGTAcAAATTcAcGAcaAAaTtGCcCAcCACcCCtTTcAcCaAGctaCAGAAAgc
                   ||| | ||| |||||||||||||| |||||| ||| |||||||||||| |||
US-09-417-  1537   GtgGTacGCctctAcAAgTTcATCAAGaAAcAcAtGCatcaCAtCCCcTTcAaGCTcAGAa

consensus          GtgGTacc-cTgTACAAgTtcATCAAGaAAcAcAtGCatcCAtCCCcTTcAaGCT-cAGaa-c
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                                                                                        4 |        -296   345
                                                                                        5 |             -396
                                                                                        8 |
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US-09-417- 1716  aggGagTCGAGaaCCGA              gagcAcTcggGcgGcgGagggtgtgaagaagcTCTGGT
                 |||||                          ||||||| |||  ||||  ||||||
US-09-417- 1530  cAGttTCGAG  tCCGA              aagccgGtaAGTTCTGAAGCCAAA
                 |||||||        ||                     |||||||||||||||     TCTGGTGA
US-09-417- 1596  AccaaCctcaacttctgatgccaagGgggAGcTcTGAtGCCAAAgagagcagagTaGTGA
                                                             ||||||
consensus        -ag--tCgagaaCcgatgatg---ggg-AgttctGa-Gccaaag-ga-----tcTgGTga


US-09-417- 1766                                 acgaactCAAAGgacgaA
                                                        |||||
US-09-417- 1576  TG                             cCAAAAG
                                                        AGA
US-09-417- 1656  TGtgaaggatgaattatgaggagttaagtcgtatatatttattttattattgaaactgattcAGA
                 |||
Consensus        tgtgaaggatgaattatgaggagttaagtcgatatattttatt------caaag--cagA


US-09-417- 1784  ctgtaAAGAGctcagggttggatgtgttggagtcaagcGgtGaAAgttccAtcTca
                 ||||||||||||
US-09-417- 1587  gcccaAAAGAC                    agcAccactGaCGtAAaggatcGAAttgt
                      ||||
US-09-417- 1717  cagatgAtcgaaCatggtgactgagggagggagaaaataccaAgctgcttctctcccccataGccaata
                 ||
consensus        c-g-aaAgagC---g-g--ga-g--------a--a-c---g-cg-aa---t-ga--t-a


US-09-417- 1845  atAcAagTagatcgatcTTggtggAtcgagtgtgcgtgcgtTGaggaggaggacCAGCag
                 ||   ||||
US-09-417- 1626  gAAgActtCttaaAtagGTTtTtgtAAGtTtATtAtTCCcAtcTtttAtTGcaactTTttGCcAGCtG
                 ||
US-09-417- 1778  aAAacaaaCgagAAgtGggggGAAgGaGaAcAAatgCgaggcacAnAtgtaTTactattaac
                 |
consensus        aaA-aa-tcga--a-tgttggg-aag--a--a-c---t--caTg-g--tt--gcagcag


US-09-417- 1906  agAtgagTgcttACtgctTaGAGAGAGgaatGAAATcagcaaactnAAtcAAAaTaaaaTcaaa
                 |||      ||||||||||||||||| |     |||||
US-09-417- 1687  ccAgAtTTTTTAgACCatatGgGAGAGA    ctAGAAAT
                                                taaAAgaAAAT        gTtttt
US-09-417- 1839  ttaaAtTtTTTAcAaCtgggcattTA    gaA        ttttggttgagActT   caaTaa
                 |
consensus        --A-atttTtta-Acc---t-gagAgg-aagaaat-------taa--AaaTaaa-t-taa


US-09-417- 1967  TTCCattaaaaaaaaaaAaaatAAAAAAAaaaAaaattaaaaaaaaaatAAAAAAAa
                 ||||           |||||||||||||||||||||||||
US-09-417- 1738  TTCC                           ctttTTctttAggAAAAAAAAAAA
                                                         ||||||||||||
US-09-417- 1890  aTtC                           CcccTTaaaTttttAAAAAAAAa
                                                         AAAAAAAAAAAA
consensus        tTcCattaaaaac---ttaaata-tAAAAAAAaaaattaaaaaaaaaaataAAAAAAAA


US-09-417- 2028  aaaa
US-09-417- 1775
US-09-417- 1928  aactcgagactagttc
consensus        aa--cgagactagttc


Alignment score = -1017.00
Scoring matrix:

         4   5   8
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> O <
O| |O      Intelligenetics
> O <

GENALIGN - Multiple Sequence Alignment Program
Release 5.4

Wed 21 Nov 101 12:09:59-PST

Solution Parameters:

  Amino Alphabet      = Identity
  Output line length  = 80
  Compress            = Off
  Histogram           = Off
  Randomization       = Off
  AMINO-Res-length    = 2
  Deletion-weight     = 5.00
  LEngth-factor       = 0
  Matching-weight     = 1.00
  NUCLEIC-Res-length  = 4
  Spread-factor       = 50

Clustered order of selected sequences:

  4. US-09-417-251-8     (1-541)
  8. US-09-417-251-16    (1-551)
  5. US-09-417-251-10    (1-570)

Region Alignment: (listed in Clustered order)

US-09-417-    1                                    heepdAaagasahrhLpdfdgfeggaeED            fgdfsdf
                                                   ||||                        |||            |||
US-09-417-    1              mrilvVL      sLAT    lllfSsLfltlcDDL tdDEDlgfldepsaapehghy
                            |||         |||        ||                          |||
US-09-417-    1   mgsttmsppsfpVVlllllllllATiaaaagSnmdeevvDDLgylidnsddiptndpdgwpegd
                  ||||||      |||   ||
consensus         mgsttmsp----vvl----lAt--a-a-s-l-----ddl----ded----------g----

US-09-417-   62   yDDdllfqdqdqdltghQPEiDEthVVvLaaaNFssflaSshhVvWEFYAPwCGHCQeLA
US-09-417-   48   hDDDAnfgdfeeDpeaYKQPEVDEKDVViLkEkNFtDtVkSNREVWVEFYAPwCGHCQALA
US-09-417-   38   DrdeYkaPEVDEKDVVvLKEgNFsdfYekNRFVMVEFYAPwCGHCQALA
consensus         -DdBa-------d---ykqPEvDEkdVVvLke-NFsdfv-snrfVMVEFYAPwCGHCQaLA

US-09-417-  123   PglsrreyaAaaTelkgenv-LAKvDATEENeLaQKYDVQGFPtv-FF-DGvhk-YnCqR
US-09-417-  109   P           EYAAAAATELKGEnvvLAKvDATEENELsQKYDVQGFPtVYFFDGvHKsYpCQR
US-09-417-   92   P           EYAAAATELKGEDViLAKvDATEENELAOQyVDVQGFPtVhFFDVDGiHKpYNGQR
consensus         PglsrrrahlAgsTnqprpnfaLAKvDATEEtdLAOKYDVQGFPtilFFiDGvrgYNGaR

US-09-417-  147   TKDAIVTWIkKKiGPGIYNITsVEDAeRILTsETKVVLGyINSLVGPEsnELAAASRLEDD
US-09-417-  164   TKDAIVTWIgkKIGPGIYNITtVEDAQRILTnETkVVLGFLNSLVGPESeELAAASRLEDD
US-09-417-  184   TKeAIVdWinkKIGPavqNvTsGeAQsILTgddkaVLaFLdtLSGahSdELAAASRLEDs
consensus         TKdAIvtWI-KKiGpGiyN-TsVedAqrILT-etkVvLgfLnsLvGpes-ELAAASRLEDd

US-09-417-  208   VNFYQTVDPeVAKLFHIeasaKRPALvLlLkKEaaKRPsvvLlkkEEEKLnrFDGeFSKSaIAeFVFaNKLPLVT
US-09-417-  225   VNFYQTVDPDVAKLFHIIDpdvKRPALiLvkkEEEKLNhfDGkFeKSeIAdFVFSNKLPLVT
consensus         VNFYQTVDPdVAKLFHIIDp--------------------------------------
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US-09-417-  245   lNFYQTstPDVAKLFHIDaaakRPsvvLlKkEEEKLfYDGeFkaSaIAgFVsaNKLPLVT
consensus         VNFYQTvdPdVAKLFHIda-akRPalvLlkkEeEKLn-fDGeF-kSaIA-FVfaNKLPLVT

US-09-417-  269   kFTRESAPliFEssIKKQLlLFAiSNDSEKLlPiFeEssKSFKGKLliFVYVEiDNEDVGKP
US-09-417-  286   iFTRESAPsvFENPIKKQLlLFAtSNDSEKLlPaFKEAAKSFKGKLliFVYVYEmDNEDVGKP
US-09-417-  306   tlTQEtsPSiFgNPIKKQiLlFPAvaseStKfIPiFKEAAKpfKGKLliFVFVErDsEeVGeP
consensus         -fTrEsaPsiFenpiRKKQllLFA-sndSeKliPiFkEaaksFKGKLliFVYvE-DnEdVGkp

US-09-417-  330   VSEYFGISGNgPeVLGYTGNeDsKFEVLakEVTlDnIKAFGenFLEDKLKPFYKSDPiPEt
US-09-417-  347   VSEYFGISGNaPKVLGYTGNdDpKKFEVLDGEVTaDXIKAFGGdFLEDKLKPFYKSDPVPES
US-09-417-  367   VadYFGITGettVLaYTGNeDarKFLDGEVsleaIKdFaegFLEDKLtPFYKSePVPES
consensus         VseYFGIsGn-p-VLgYTGNeD-KKFVLdgEVtld-IKaFge-FLEDKLkPFYKSdPvPEs

US-09-417-  391   NDGDVkVvVGdNFDnIVLDESKDVLLEIYAPWCGHCQoALEPtVnkLAkHLRgIdSLVIAKM
US-09-417-  408   NDGDVKiVVGnNFDeIVLDESKDVLLEIYAPWCGHCQoALEPiiYdkLAkHLRnIeSLVIAKM
US-09-417-  428   NDGDVKiVVGkNlDliVfDEtKDVLLEIYAPWCGHCQsLEPtYnnLAkHLRsvdSLVvAKM
consensus         NDGDVKiVVG-NFD-IVlDEsKDVLlEIYAPWCGHCQoaLEPtVnkLAkHLR-idSLVIAKM

US-09-417-  452   DGTTNEHPRAKSDGFPtILFEPAGNKsFDPiTVdTDRTVVALYKFIkKnASIPFKLQKPvs
US-09-417-  469   DGTTNEHPRAKpDDGFPTILFFPAGNKsFDPiTVDTDRTVVAfYKFIkKHASIPFKLQKP
US-09-417-  489   DGTTNEHPRAKSDGyPTILFyPAGKKSFePITffegeRTVVdLYKFIkKHASIPFKL
consensus         DGTTNEHPRAKsDGfPtiLFFPAGnkSFdPiTvdtDRTvValYKFikkhASIPFKLqkpvs

US-09-417-  513   spkavsseaksgDAKESpkSStdVKDEL
US-09-417-  528       tstGdakgSSDAKES qSS   DVKDEL
US-09-417-  545       krqesrtestraEgvkSSgtnsKDEL
consensus         sp---s----ssdakEs-kSS-tdvKDEL
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Alignment score = 411.00

Scoring matrix:

            4 |
            5 |  94
            8 |  94  289

            8 |
            5 |  94
            4 |  94  289   213

                 4   5    8
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